SECTION 7

- USE OF ANTIVIRALS IN THE PROPHYLAXIS AND TREATMENT OF INLUENZA DURING A PANDEMIC -

Goals for the Plan for Use of Antivirals during a Pandemic:

- Initial goals for treatment and prophylaxis will be to attempt to limit spread of influenza after introduction and to attenuate clinical severity.
- Later goals for treatment will be to decrease complications and for prophylaxis to maintain essential personnel and limit spread.
- Identify priority groups for the use of antivirals for prophylaxis and treatment
- Develop a system to obtain funding to purchase and stockpile antivirals

Prophylaxis:

- A primary goal of prophylaxis is to maintain essential healthcare and public safety services.
- Limitations on the supply of antivirals would limit use of antivirals for prophylaxis of individuals at high risk of complications.
- A course of antivirals for prophylaxis would last 6- 8 weeks (while the virus was circulating in the community) or until 2 weeks after vaccination.
- The amantadane class of antivirals (amantadine and rimantadine) would be the drug of choice for prophylaxis because of their greater availability and lower cost.
- Use of the neuraminidase inhibitors for prophylaxis would be limited to direct contacts of the initial cases *only* in order to contain introduction as much as possible.

Treatment:

- The goals of antiviral treatment are to decrease the risk of severe complications from influenza, decrease influenza transmission and shorten the time to recovery and return to work.
- Neuraminidase inhibitors are preferred for treatment because:
    - The amantadanes have been associated with the rapid selection and development of resistant viruses when used for treatment. The strains of avian H5N1 influenza viruses that have infected individuals in SE Asia in 2004 were resistant to the amantadanes.
    - The neuraminidase inhibitors reduce lower respiratory tract complications from influenza.

Challenges:

- Unknown how many doses of antivirals medication will be available during a pandemic.
- Antivirals may be available in both the public and private sectors.
- Oseltamivir, the antiviral drug shown to be effective against H5N1 strain of influenza is made by a single manufacturer. Production occurs in a series of steps and takes 12 months for raw material to the finished product.
- For treatment to be effective, it must be started within 48 hours of symptom onset.

INTERPANDEMIC PERIOD

MDPH is conducting a survey of hospitals to quantify existing inventories of antiviral medications.

PANDEMIC ALERT AND PANDEMIC PERIOD

MDPH is waiting for further guidance from CDC, but is likely that antiviral medications will be distributed to states pro rata. With limited antiviral supply, treatment may be the best strategy to prevent adverse health outcomes, especially if delivered early. Prophylaxis in defined settings, i.e., small high-risk groups or critical services groups, or post-exposure prophylaxis in institutional settings may be reasonable.

If treatment is the main strategy for use of antivirals, then the point of care will likely become the treatment distribution sites.

The Department of Health and Human Services (HHS) is currently in the process of stockpiling neuraminidase inhibitors, oseltamivir (Tamiflu®) and zanamivir (Relenza®) as preparation for pandemic response. The goal of this initiative is to have sufficient antiviral medication available for 25% of the US population or 81 million courses of therapy. HHS intends to fully purchase 15% of the necessary goal and offer the states the opportunity to purchase 10% of the courses at a 25% discount from the HHS contracted price for the medication. When fully implemented, HHS will assign 956,777 courses of antiviral therapy to the Commonwealth of Massachusetts plus an additional 674,870 courses that have been made available for Massachusetts to purchase with HHS providing a 25% subsidy. The total available number of antiviral courses allocated to the Commonwealth is 1,630,870.

Whereas the HHS stockpile contains 80% oseltamivir and 20% zanamivir, the apportion of each from the HHS fully purchased portion equal 765,422 courses of oseltamivir and 191,355 courses of zanamivir. At this time the Commonwealth of Massachusetts intends to fully participate in the purchase of its allotment of antiviral medication taking advantage of the 25% federal subsidy.

Oseltamivir for Prophylaxis and Treatment of Influenza

	Cost/course of therapy	Doses/6 wks prophylaxis[1]	Cost/Course of prophylaxis	Doses/ Course of Tx	Cost/Course of Tx
Oseltamivir (Tamiflu)	$14.43	Not recommended	$ 14.43	1 (75 mg BID x 5 days)	$ 14.43

[1] Course of prophylaxis = 4 weeks pre-vaccination + 2 weeks post-vaccination